

Final Assessment of Service Science (401077)
December 18th 2015

Exam rules:

No books or reference material, mobile phones or other electronic devices.

The questions should be answered in **English**

Please indicate the following on your answer sheet:

Student Name:

Student Number:

Year of Integrated assignment: 2014 | 2015

Highest Possible Score: 100

Grade for this assessment: score/10

Total number of questions: 10

Total number of pages: 4

Question 1. Basic service terminology

- a. With physical goods, inventory is the mechanism to decouple demand and supply, thereby preventing that a customer need can not be satisfied. Explain how in case of services, demand and supply can be decoupled. (5 points)
- b. Vargo and Akaka introduced the Service Dominant Logic (SDL). One observation in SDL is that customers value a service as an experience. Discuss two factors that influence the way how actors value such an experience. (5 points)

Question 2. Service Quality

SERVQUAL is a framework to measure quality of services.

- a. One dimension of the SERVQUAL framework is reliability. Give the other four dimensions of SERVQUAL and explain them briefly. (4 points)
- b. Discuss if SERVQUAL is a suitable framework to measure service quality for electronic services (6 points)

Question 3. Globalization of services (10 points)

A service as offered by a company can follow different growth strategies such as focused service, focused network, clustered service, and diversified network. Explain each growth strategy and give for each strategy an example.

Question 4. Value modeling

Consider the text below:

As in many European countries, the electricity power industry will be deregulated. As a result, a substantial change in the sector will be expected. End customers will obtain electricity (KiloWattHours, KWh) from a supplier that can be seen as a retailer. Since there are many of such “electricity” retailers, the end-customer can choose a particular supplier to satisfy his needs. Additionally, the customer will have to pay for distribution capacity to deliver the electricity to his premises. Distribution capacity will be delivered by a distribution company. In a country, there are more multiple distribution companies, but the final customer can choose from only one, since distribution companies each serve a specific region. In turn, distribution companies obtain long distance electricity transport facilities from an electricity transportation company. In a country, there is only one of such a company. The supplier may obtain electricity from many sources. First of all, it can be obtained from big, “dirty” energy power plants. Second, the supplier may decide to obtain electricity from a “green” electricity generator. In addition to this green electricity, the supplier obtains also green certificates for each KWh green electricity. Each certificate can be sold to the government for a subsidy.

Construct an e³value diagram for the above text, and for a specific distribution region. You need to show actors, market segments, value interfaces and port, value transfers, value objects and dependency paths. You need not to show value activities. (10 points)

Question 5. Process modeling (10 points)

Consider the text below:

A customer has, for his car, an insurance with an insurance company. Then, the customer is involved in an accident, and his car is damaged. As a result, the customer writes a damage claim and submits the claim to the insurance company. After receiving the claim, the company registers the claim and checks the claim for completeness and correctness. The customer is informed about the completeness and correctness of his claim. If the claim is incorrect or incomplete, the insurance company considers the claim as processed. In case the customer is informed about an incorrect or incorrect claim, he corrects his claim and submits a new claim. On the other hand, if the claim is correct and complete, the customer waits for a decision about the claim, and the insurance company processes the claim further. The company inspects the car for the damage, and in parallel, determines the maximum compensation the customer is entitled to, based on the contract with the customer. Finally, a decision is made about the claim, and the amount of money is decided upon. The customer is informed about the decision, and the claim is handled.

Give the BPMN model representing the above description. Include the resource lanes, (message) events, sequence flows, gateways, and activities. You may omit data associations and stores. (10 points)

Question 6. Service Science research

In e³value, ideal behaviour of actors is supposed, whereas e³control assumes sub ideal behaviour. Explain the difference between ideal and sub ideal, and illustrate the answer with an example. (10 points)

Question 7. Enterprise application integration

In middleware, one of the components is an EAI broker.

- Describe the functionality of an EAI broker. (5 points)
- Explain how a broker contributes to reduction of the complexity of the application integration problem. (5 points)

Question 8. SOAP

SOAP/WSDL offers two interaction styles, namely RPC and Document Style. Consider the following SOAP document.

```
...
<env:Envelope xmlns:env="http://www.w3.org/2003/05/soap-envelope">
...
  <env:Body>
    <p: computer
      xmlns:p="http://computershop.com/computer ">
      <p:type>COMP342</p:type>
      <p:cpu>i5</p:cpu>
      <p:disk>1 TB</p:disk>
      <p:memory>8 GB</p:memory>
    </p:computer>
    <q:printer
      xmlns:q=" http://computershop.com/printer">
      <q:type>HX4372</q:type>
      <q:trays>2</q:trays>
    </q:printer>
  </env:Body>
</env:Envelope>
...
```

Which style of interaction is used and why. (10 points)

Question 9. WSDL

In WSDL 1.1, the concept of PortType is present.

- Explain the concept of PortType and give an example. (5 points)
- Some people consider the name of the concept PortType as confusing Therefore, in WSDL 1.2, the concept of PortType is renamed. Give a better name for the concept of PortType (you may also mention the name as used in WSDL 1.2), and argue why your proposal is a better name. (5 points)

Question 10. Web service coordination and composition

- a) Explain what the web service coordination problem is. (5 points)
- b) Often a distinction is made between web service orchestration and choreography. Explain the difference between orchestration and choreography. (5 points)